

CLAIMS

What is claimed is:

1. A membrane electrode assembly for an electrochemical fuel cell comprising:
 - an anode fluid diffusion layer and a cathode fluid diffusion layer;
 - an ion-exchange membrane interposed between the anode and cathode fluid diffusion layers;
 - an anode catalyst layer interposed between the anode fluid diffusion layer and the ion-exchange membrane; and
 - a cathode catalyst layer interposed between the cathode fluid diffusion layer and the ion-exchange membrane, the cathode catalyst layer comprising a platinum catalyst alloyed with less than 10% of a noble metal selected from rhodium, iridium, palladium and gold.
2. The membrane electrode assembly of claim 1 wherein the noble metal is gold.
3. The membrane electrode assembly of claim 1 wherein the platinum is alloyed with less than 5% of the noble metal.
4. The membrane electrode assembly of claim 1 wherein the platinum is alloyed with less than 3% of the noble metal.
5. The membrane electrode assembly of claim 1 wherein the platinum is alloyed with less than 1% of the noble metal.
6. The membrane electrode assembly of claim 1 wherein the platinum catalyst is supported.

7. The membrane electrode assembly of claim 1 wherein the platinum catalyst is a binary catalyst.

8. An electrochemical fuel cell comprising the membrane electrode assembly of claim 1.

9. An electrochemical fuel cell stack comprising at least one fuel cell of claim 8.